

The following claims are presented for examination:

- 1.** (Currently Amended) An apparatus comprising:
a plurality of optical fibers, wherein:
 said optical fibers each having a first end and a second end;
 said fibers are capable of transmitting infrared radiation ("IR");
a sensor for sensing IR, wherein said sensor is in IR-sensing contact with said first end of each of said optical fibers;
a separator, wherein said separator engages said plurality of fibers and is suitable for spatially separating said optical fibers **from one another** in a pattern that enables said optical fibers to **physically** engage individual samples on a sample plate.
- 2.** (Original) The apparatus of claim 1 further comprising a collar for bundling said optical fibers.
- 3.** (Original) The apparatus of claim 1 wherein said second end of said optical fibers are physically adapted to receive a first chemical entity.
- 4.** (Original) The apparatus of claim 3 wherein said individual samples comprise said first chemical entity.
- 5.** (Original) The apparatus of claim 1 further comprising a surface having a binding compound disposed thereon.
- 6.** (Original) The apparatus of claim 1 wherein said first end of said optical fibers are physically coupled to said sensor.
- 7.** (Original) The apparatus of claim 1 wherein said separator is engaged to said plurality of fibers such that it can slide along said plurality of fibers.

- 8.** (Currently Amended) A method comprising:
physically engaging a chemical entity to a first end of an IR-transmitting fiber;
bringing said chemical entity in contact with a binding compound; and
conducting a thermal signal resulting from a binding interaction to a thermal sensor through said IR-transmitting fiber, wherein said binding interaction occurs between said chemical entity and said binding compound.
- 9.** (Original) The method of claim 8 further comprising sliding a separator along said IR-transmitting fiber.
- 10.** (Original) The method of claim 8 wherein engaging a chemical entity further comprises inserting said first end of said IR-transmitting fiber into a sample carrier.
- 11.** (Original) The method of claim 8 wherein bringing said chemical entity in contact with a binding compound further comprises inserting said first end of said IR-transmitting fiber into a well after engaging said chemical entity.
- 12.** (Currently amended) A method comprising:
positioning a **movable** separator along a plurality of IR-transmitting fibers to obtain a desired spacing between ~~said~~ adjacent **IR-transmitting** fibers at ~~one~~ **a sampling** end thereof; and
conducting a thermal signal through **at least one of** said IR-transmitting fibers.
- 13.** (Currently Amended) The method of claim 12 further comprising engaging a chemical entity to said ~~one~~ **sampling** end of said IR-transmitting fibers.
- 14.** (Original) The method of claim 13 further comprising bringing said chemical entity into contact with a binding compound.
- 15.** (Original) The method of claim 12 wherein conducting a thermal signal further comprises conducting said thermal signal to a thermal sensor.